

WHAT IS CLAIMED IS:

1. A method for manufacturing extruded composite lumber comprising the steps of:
 - providing composite materials to an extruder having an outlet;
 - extruding the composite materials at a variable rate to form a composite extrudate;
 - determining a rate of extrusion of the composite extrudate; and
 - controlling a servo-controlled cutter based on the rate of extrusion of the composite extrudate.
2. The method of claim 1, wherein the servo-controlled cutter comprises a table having an upper surface, wherein the controlling step comprises:
 - moving the upper surface in synchrony with the rate of extrusion;
 - clamping the composite extrudate to the upper surface of the table; and
 - cutting the composite extrudate.
3. The method of claim 2, wherein the cutting and clamping steps occur during the moving step.
4. The method of claim 2, wherein the moving step comprises shifting the upper surface between first and second positions, and further comprising the step of returning the upper surface to the first position after the cutting step.

5. The method of claim 2, further including the step of unclamping the composite extrudate after the cutting step.

6. The method of claim 1, wherein the rate of extrusion is between 5 and 40 ft/min.

7. The method of claim 1, wherein the rate of extrusion is between 8 and 20 ft/min.

8. The method of claim 1, wherein the variable rate is between 1 and 2 ft/min.

9. Apparatus for manufacturing composite lumber, the apparatus comprising:

an extruder for extruding initially heated composite materials as an extrudate;

an extrudate speed detector having a speed-indication output, the extrudate speed detector coupled to the extruder; and

a servo-controlled cutter coupled to the speed-indication output of the extrudate speed detector, wherein the servo-controlled cutter cuts an inelastic extrudate portion without communicating imperfections to an elastic extrudate portion as the extrudate is extruded.

10. The apparatus of claim 9, wherein the extruder comprises an extrusion die with a generally rectangular cross-sectional configuration.

11. The apparatus of claim 9, wherein the extruder comprises an extrusion die with cross-sectional configuration adapted to form hollow-core lumber.

12. The apparatus of claim 9, wherein the extruder comprises an extrusion die with cross-sectional configuration adapted to form railing pieces.

13. The apparatus of claim 9, wherein the extrudate speed detector comprises an encoder wheel, and the speed-indication output comprises a pulse output.

14. The apparatus of claim 13, wherein the pulse output is coupled to the servo-controlled cutter using at least one electrical conductor.

15. The apparatus of claim 9, wherein the extrudate speed detector comprises an optical speed detector.

16. The apparatus of claim 9, wherein the servo-controlled cutter is a traveling cutoff saw.

17. The apparatus of claim 9, wherein the servo-controlled cutter is a traveling fly knife.

18. A composite lumber extrusion line for producing composite lumber materials extruded at a variable speed, the extrusion line comprising:

an extruder operable to produce an extrudate having substantially uniform cross-sectional dimensions, the extrudate being extruded at the variable speed;

an extrudate speed detector coupled with the extruder operable to transmit an extrudate speed indication associated with the variable speed of the extrudate; and

a servo-driven cutter comprising a clamp, a movable table, and a table-travel-speed input, the servo-driven cutter coupled to the extrudate speed detector, wherein the movable table moves in relation to the variable speed of the extrudate.

19. The extrusion line of claim 18, wherein the composite lumber materials comprise extruded cellulose composite lumber.

20. The extrusion line of claim 18, wherein the variable speed is dependent upon a bulk density of cellulose materials.

21. The extrusion line of claim 18, wherein the extrudate speed detector is an encoder wheel.

22. The extrusion line of claim 18, further comprising a spray bath positioned in the extrusion line between the extruder and the servo-driven cutter, the spray bath being adapted to cool the extrudate from a heated plastic condition to a cooled hardened condition prior to being cut by the servo-driven cutter.

23. The extrusion line of claim 18, wherein the extrudate speed detector is positioned adjacent the extruder and wherein the extrudate speed detector measures the variable speed of the extrudate by contacting a surface of the extrudate and rotating at a rate proportional to the variable speed of the extrudate.

24. The extrusion line of claim 18, wherein the extrusion line does not include a puller.